

**Notice of Allowability**

Application No.

09/653,149

Examiner

Thao P. Le

Applicant(s)

DERDERIAN ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/16/06.
2. ☒ The allowed claim(s) is/are 1-3, 6-8, 10-21, 23-25, 34, 36, 37, 39-42, 44, 45, 47-49, 52-56, 59-62, 65-69, 72-75.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

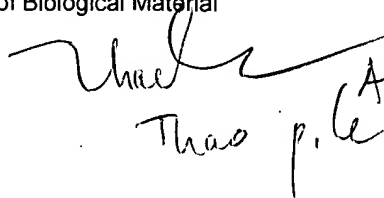
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 10/16/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Thao P. Le  
AY 2818

DETAILED ACTION

***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 10/16/06 was filed after the mailing date of the application. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

**Response to Amendment**

This Office Action is in response to Amendment filed on 10/16/2006.

Claims 4, 5, 22, 35, 38, 43, 46, 50, 51, 57, 58, 63, 64, 70, 71 have been cancelled.

Claims 1, 13, 18, 34, 36, 37, 40, 44, 54, 61, 65, 68, 75 have been amended.

Claims 1-3, 6-8, 10-21, 23-25, 34, 36, 37, 39-42, 44, 45, 47-49, 52-56, 59-62, 65-69, 72-75 are pending.

Remark of Applicants has been fully considered.

**Reason for allowance**

**Claims 1-3, 6-8, 10-21, 23-25, 34, 36, 37, 39-42, 44, 45, 47-49, 52-56, 59-62, 65-69, 72-75 are allowed.** The following is an examiner's statement of reason for allowance: None of the references of record teaches or suggests the claimed limitations

having a method of forming a capacitor comprising the step of atomic layer depositing a conductive barrier layer to oxygen diffusion on and in physical contact with a first electrode wherein the barrier layer containing WN and among other limitations cited in independent claims 1, 13, and none of the references of record teaches or suggests the claimed limitations having a method of forming a capacitor comprising the steps of atomic layer depositing or chemisorbing a first metal-containing conductive layer on and physical contact with a first electrode containing HSG polysilicon, forming a capacitor dielectric layer on the atomic layer deposited conductive layer, atomic layer depositing or chemisorbing a second metal containing conductive layer over the dielectric layer and among other limitations cited in independent claims 34, 40.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-F (8-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor David C. Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thao P. Le', with a stylized, cursive script.

Thao P. Le  
Primary Examiner  
Art Unit 2818  
November 11, 2006.